View metadata, citation and similar papers at core.ac.uk
brought to you by CORE
provided by European Online Journal of Natural and Social Sciences (ES)
Vol.4, No.1 Special Issue on New Dimensions in Economics, Accounting and Management
ISSN 1805-3602

The Asymmetric Effects of Sensitivity of Investors on Stock Return in Firms Listed on Tehran Stock Exchange

Shahla Ghezelbash[1*], Sayed Ali Vaez[2], Babak Abedi Sedghiani[2]
[1]MA in Accounting, Shahid Chamran University, Ahvaz, Iran
[2]Faculty Member of Shahid Chamran University, Ahvaz, Iran
*E-mail: ghezelbash256@gmail.com

Abstract

The aim of the present research is to study the asymmetric effect of investors sensitivity on stock return in firms listed on Tehran Stock Exchange. The research population includes all the firms listed in Tehran Stock Exchange during 2006 – 2011 that the sample size has been determined with the use of screening method which is equal to 138 firms after the elimination of irrelevant observations. In this study in which panel data with fixed and random effects has been used, the results obtained from the analysis of these 138 firms during the time span of 2006 – 2011 with the use of multi variable regression at 95% confidence level show that there is a direct and significant relationship between institutional investment ratio and firms' stock return. Also, these results indicate that there is no significant relationship between managerial investors' ratio with firms' stock return.

Keywords: Stock return, institutional investors, managerial investors, investors' sensitivity

Introduction

In a growing economy, investor managers and portfolio managers have been always searching for suitable options of investment in order to both obtain profit and in the long run increase their wealth. Financial markets are one of those markets that can manifest investment motivation for investors (Ang et al., 2002). Currently, Stock Exchange of Iran has taken over this important thing. Investment managers and portfolio managers are seeking to choose and select those securities that have the highest Profitability. Also, if investment is in the form of holding a collection of diverse securities (portfolios), it will be accompanied by risk. In other words, selection of portfolio without consideration of factors affecting return is risky (Brown, 2009). It should be noted that in practice investors don't give so much of thought to the variable of risk beside return or in other words, they don't consider risk as an important criterion for investment (Roodman, 2009). In fact, what affects the return of a firm in general is the status within the organization and outside the organization. For example, ownership structure and diversity of shareholders, business risk, industry risk, market risk and …. (Sarafidis et al., 2009). Then, if the investor will consider the factors inside and outside the organization in relation with return, certainly he or she will obtain desirable results (Mateut and Guariglia, 2010). Chu et al. (2012), state that investors show different levels of sensitivity in relation to purchase of different portfolios and focus most of their attention on the stock return of the year under study. Three groups of institutional, managerial and small investors show different behaviors when faced with influential internal and external variables and sometimes these behaviors changes the ownership structure of these companies and most of these sensitivities are originated from the increase or decrease of efficiency or performance of the companies considering the increase or decrease in stock price and eventually stock return of companies. In this research the asymmetric effects of investors' sensitivity have been studied on stock return in firms and the importance of this topic can be sought out in the slow movements of threats that be caused in case of lack of a correct and proper criterion for determining the expected

return rate. If there is no criterion in Tehran Stock Exchange for determining the price of accepting higher risk and the stock of companies having more risk will be priced similar to the stock of the companies with lower risk, then the realized return of the investors will not be in proportion with the level of the accepted risk. In addition to that, in the condition of estimating the expected return rate, profit is the market's systematic risk factor and for the calculation of the correlation coefficient, the positive and negative returns and market indicators comparing to the time period average are used and as a result the positive portions of the differences compared to average moderate negative differences and hence systematic risk, which is the most important factor for the estimation of expected return rate, is not estimated in a proper way and so many of the investors won't have the ability to obtain a return proportional to risk and the realized return will be different with the investors' expectations that eventually will cause an asymmetric sensitivity (Chen and Chen, 2012). Lack of consideration of the relationship between risk and the expected return by the investors contributes to the inefficiency of the market and causes Iran's capital market to be off-balance and inefficient all the times. This lack of consistency will cause the departure of the capitals from this young market or prevents the entrance of new capitals to it, hence, existence of a model that can cover risk-taking criteria of investors and return in determining stock value and move Tehran Stock Exchange toward more efficiency can be helpful and appears to be necessary (Abbasian et al., 2010). Therefore, in the new recommended model both negative and positive differences are used for the estimation of systematic risk of market, so in this way so many of the above mentioned problems will be solved. In this research, asymmetric effects of investors' sensitivity refers to the investors' behavior in facing with changes in the firm's policies compared to change and exchange in ownership among the three groups of institutional, managerial and small investors in Tehran Stock Exchange in consideration with systematic risk increase or decrease rate of firms. In this way that if any change occurs in the ownership of these three groups of investors, we will study whether it causes increase or decrease in the stock price? The importance and significance of this study can be expressed in this way that it is felt necessary to find a model that can qualitatively explain the effect of investors' risk on actual return in a proper and desirable way and a model that can provide a clear picture and image from this situation in Tehran Stock Exchange. This model can as well prove the existence of a linear relationship between systematic risk and return in asymmetric condition. Considering the above mentioned regarding the importance of investors' sensitivity and its asymmetric effects on firms' stock return, conducting a study about the impacts of asymmetric effects of investors' sensitivity on stock return in firms listed on Tehran Stock Exchange in our country appears to be important and therefore, our main aim in this study is to answer to this question that whether asymmetric effects of investors' sensitivity on stock return in firms listed on Tehran Stock Exchange is effective in companies. That for this purpose, the following research hypotheses have been studied:

First research hypothesis: there is a significant relationship between institutional investors and stock returns of companies.

Second research hypothesis: there is a significant relationship between managerial investors and stock returns of companies.

Third research hypothesis: the investors' sensitivity on stock return is asymmetric.

In the following section for clarification of the topic of the study and for the reader to gain a better understanding of the study, a number of the somehow similar studies that have been conducted in this regard are discussed:

Chen et al. (2012) in a research with the title of "asymmetric effects of investors' sensitivities on industry stock return" have studied the relationship between these variables in Asian companies. based on panel data between 1996 to 2010 step to step in stock market have closely

studied the stock return of companies in 11 Asian countries. Based on empirical evidence related to factors affecting stock return of different industry they have concluded that asymmetric effects of sensitivities related to oil and gold have affected the stock return of different industries to a great extent. They have also concluded that investment sensitivities have a positive and significant effect on spending the stock resulting from Additional return and specifically it is originated from different behaviors of the investors. Eventually, the results of them indicate that asymmetric sensitivity of investors mostly is originated from institutional shareholders and this sensitivity is asymmetric and is different in different industries considering different activities they perform. Our study also follows the study of Chen and colleagues (2013); however, considering the economic conditions of our country and the existing differences in the Stock Market of our country and the country this study has been conducted in set of variables have been revised and have been moderated considering the capital market of our country.

Caglayan et al. (2012), their work of "inventories, asymmetric sales and financial strength of companies" have studied the impact of the relationship between these variables. In their work they have studied that whether asymmetric sales are originated from companies' financial strength or they are rooted in investment level of the companies in inventories. Based on panel data in relation to manufacturing companies they have found that asymmetric sales are originated from an increase in the level of investments in inventories and that in a way they are related to an increase in the financial strength of the companies. Also, their results provide some evidences in relation with financial strength and its effect on asymmetric sales.

Imam (2010) in a research has studied the effective factors on investment in Tehran Stock Exchange and have found that 18 factors of political factors of the country, clarification of financial information, industry type, transaction volume of a share, price to profit ratio, companies' ownership type, forecast of earnings per share, stock price fluctuations, delay in the payment of cash dividends, capital increase by companies, market interest rate and bank interest, inflation rate, Rumors circulated in stock market, and Brokers' recommendations have a great significance in investors' decisions.

Samavati (2009) has studied the relationship between ambiguity in financial reporting and distribution of stock return. The criterion for determining ambiguity of financial statements in this study is earnings management though manipulation of discretionary accruals. The indicator of ambiguity is equal to Two-year moving sum of absolute discretionary accruals that discretionary accruals also have been calculated with the use of modified Jones model. After studying 343 observations during 2003 to 2007, they have found that ambiguity of financial statements doesn't have any significant relationship with company's risk and downfall and Price falls and jumps and coordination between changes in stock return with overall return of market.

Sheikh and Safarpour (2007) in a research have studied the effect of investment period on the performance of the investment firms listed on Tehran Stock Exchange during 2002 to 2006, based on short-term and long-term investment, balance sheet and dividing investment firms into two groups of investment companies with long-term investment period and investment companies with short-term investment period. The obtained results from their study show that the investment period doesn't affect the performance of the investment companies and companies with long-term investment and short-term investment periods have similar performances that of course based on the indices of price and cash return as the base index they have had a weaker performance than stock market and based on the index of the 50 active company have had a equal performance with stock market.

Research method

The present study is an applied study from aim point of view; it is a descriptive study from method point of view and from conduct point of view is a survey study.

Research population and sample

The population of the present study includes all the firms listed in Tehran Stock Exchange that from these firms the research sample has been selected with the use of random systematic sampling method and based on the following criteria:

- The fiscal year of these firms should have been changed during the time span under study (2006 – 2011).
- Their financial data and information should be available.
- They should not be among financial firms (such as banks or financial institutions) and investments companies or financial broker companies.

Therefore, the population of the present study includes all the listed firms in Tehran Stock Exchange that until the end of year 2011 according to Rahavard Novin application is equal to 470 firms. The sample size has been determined considering screening method and after the elimination of irrelevant observations it is equal to 138 firms as per table 1.

Table 1. Research sample

Description	Quantity	Quantity
All the firms listed in stock exchange till the end of 2011		470
The number of firms listed that have entered stock exchange in	109	
The number of firms that in the time span of 2006 – 2011 have	26	
The number of active firms in financial, investment and banking	35	
For the purpose of homogeneity the firms that their fiscal year is	54	
The number of the firms with more than 3 months of trading halt	89	
Firms with irrelevant data and information	19	
Total of the eliminated firms		332
Firms which are being studied		138

Finally, with the use of screening method and after the elimination of irrelevant observations the number of final sample is equal to 95 firms as per the table.

Data collection instrument

In cases that we seek to study the relationship between a dependent variable with one or multiple dependent variables and the goal of the researcher is to estimate a parameter (parameters) for the independent variable (variables) and to predict with providing a model based on this relationship and with the use of historical data, the available data and variables in a model usually can exist in three different way:

- Time series data
- Cross section data
- Pooling data

Time series data, measure the values of a variable (multiple variables) in Consecutive points in time. This consecution can be yearly, seasonal, monthly, weakly or even continuous.

Cross section data, measure the values of a variable (multiple variables) Over time and multiple units. These units can be different manufacturing, industrial or company units.

Pooling data, in fact presents cross section data over time or in other words these data are the result of the combination of two groups of time series data and cross section data.

Considering the existing research literature in his study we will be using pooling data.

Data analysis

In this study pooling data have been used of testing hypotheses. In pooling data method for selection between panel and pooling methods Leamer-F test has been used. in case of choosing panel method, Hausman test is used for selecting among the methods of fixed effect and random effect. In addition to this, for stationarity test, in case of using pooling method, Dicky – Fuller test and in case of selection of panel method, Hadri test has been used. the collected data after modification and necessary classification based on the variables under study have been entered into Eveiws7, SPSS20, Minitab16 software with the use of Excel software and the final analysis has been performed on them and finally, with the use of the obtained results from the relevant softwares we have tested research hypotheses in terms of their confirmation or rejection.

Research findings

Descriptive findings of research variables are as per table 2:

Table 2. Descriptive statistics of research variables

Variables description		Average	Mean	Standard deviation	Min.	Max.
R	Stock return	0.37577	0.39358	0.31174	-0.17045	0.90444
SEI	Institutional investors ratio	0.51014	0.60000	0.33813	0.00000	0.99900
MSI	Managerial investors ratio	0.40562	0.47564	0.27109	0.00000	0.86307
BC	Asymmetric sensitivity of investors	0.32858	0.32840	0.13299	0.09728	0.56127
Beta	Traditional beta	-0.10204	-0.06984	1.49727	-2.67003	2.44159
Betad	Adjusted beta	0.93961	0.97969	1.47811	-1.66082	3.43411
SIZE	Company size	13.3146	13.18103	1.44736	9.86016	19.61803

In the following the deducted results of the research hypotheses will be discussed:

Research hypothesis testing

H1: There is a significant relationship between institutional investors and stock return of companies.

In this study for testing 1st research hypothesis the following regression model has been used:

$$Ri,t = \beta 1\ SEIi,t + \beta 2\ \beta etai,t + \beta 3\ \beta etad\ i,t + \beta 4\ SIZEi,t + \varepsilon i,t$$

After testing Regression assumptions and assuring from their establishment, the obtained results from equation fit of the above regression have been presented in table 3. F-statistic value (14.781) indicates that the regression model is significant overall. As it can be seen in the lower part of table 3, coefficient of determination and adjusted coefficient of determination are equal to 68.9% and 64.7%, respectively. Therefore, it can be concluded that in the mentioned regression equation, only about 64.7% of the changes in stock return of the companies under study can be explained by independent and control variables. In this table, positive (negative) values in the coefficient value column indicate to the direct (reverse) effect rate of each of the variables on stock return of companies under study.

As per table 3, significance level of institutional investors ratio variable (SEI) is equal to 0.003 that this value is smaller than the considered significance value (5%) in the present study; also the absolute value of t-statistic related to this variable (3.141) is bigger than the obtained t-statistic from the table with the same freedom degree. Therefore, at 95% confidence level, the obtained coefficient for this variable in the above regression model is significant and hence it can be said that

there is a significant relationship between institutional investors' ratio and stock return of companies and hence the 1st research hypothesis is confirmed.

Table 3. Obtained results from regression equation fit

Variable	Variable coefficient	Coefficient value	t-statistic	Sig. level
Fixed value	0β	0.897	4.507	0.000
SEI	1β	1.215	3.141	0.003
Beta	2β	1.098	2.388	0.002
Betad	3β	1.736	2.847	0.014
SIZE	4β	-2.311	-2.601	0.0037
Coefficient of determination	0.689	F-statistic		14.781
Adjusted coefficient of determination	0.647	P-value (significance)		0.000
		Durbin-Watson statistic		2.089

H2: There is a significant relationship between managerial investors' ratio and stock return of companies.

In this study for testing 2nd research hypothesis the following regression model has been used:

$$R_{i,t} = \beta 1\ MSI_{i,t} + \beta 2\ \beta etai,t + \beta 3\ \beta etad\ i,t + \beta 4\ SIZEi,t + \varepsilon i,t$$

After testing Regression assumptions and assuring from their establishment, the obtained results from equation fit of the above regression have been presented in table 4. F-statistic value (21.651) indicates that the regression model is significant overall. As it can be seen in the lower part of table 4, coefficient of determination and adjusted coefficient of determination are equal to 54.1% and 50.8%, respectively. Therefore, it can be concluded that in the mentioned regression equation, only about 50.8% of the changes in stock return of the companies under study can be explained by independent and control variables.

Table 4. Obtained results from regression equation fit

Variable name	Variable coefficient	Coefficient value	t-statistics	Sig. level
Fixed value	0β	6.961	3.091	0.006
MSI	1β	2.641	0.588	0.561
Beta	2β	1.21	0.158	0.875
Betad	3β	2.012	2.871	0.004
SIZE	4β	-2.891	-2.342	0.0075
Coefficient of determination	0.419	F-statistic		21.651
Adjusted coefficient of determination	0.381	P-value (statistic)		0.000
		Durbin-Watson statistic		1.571

As per table 4, significance level of managerial investors' ratio variable (MSI) is equal to 0.561 that this value is larger than the considered significance value (5%) in the present study; also the absolute value of t-statistic related to this variable (0.588) is smaller than the obtained t-statistic from the table with the same freedom degree. Therefore, at 95% confidence level, the obtained coefficient for this variable in the above regression model is not significant and hence the 2nd research hypothesis indicating to the existence of a significant relationship between managerial investors' ratio and stock return of companies is rejected.

H3: Investors' sensitivity on stock return is asymmetric.

In this study for testing the 3rd research hypothesis, the following regression model has been used:

$$R_{i,t} = \beta 1\ BC_{i,t} + \beta 2\ \beta eta_{i,t} + \beta 3\ \beta etad_{i,t} + \beta 4\ SIZE_{i,t} + \varepsilon_{i,t}$$

After testing Regression assumptions and assuring from their establishment, the obtained results from equation fit of the above regression have been presented in table 4. F-statistic value (24.309) indicates that the regression model is significant overall. As it can be seen in the lower part of table 5, coefficient of determination and adjusted coefficient of determination are equal to 41.9% and 38.1%, respectively. Therefore, it can be concluded that in the mentioned regression equation, only about 38.1% of the changes in stock return of the companies under study can be explained by independent and control variables.

Table 5 .Obtained results from regression equation fit

Variable name	Variable coefficient	Coefficient value	t-statistic	Sig. level
Fixed value	0β	0.671	3.297	0.021
BC	1β	2.365	1.608	0.218
Beta	2β	0.911	2.266	0.047
Betad	3β	1.121	3.112	0.028
SIZE	4β	-1.312	-2.746	0.038
Coefficient of determination	0.419	F-statistic		24.309
Adjusted coefficient of determination	0.381	P-value (significant)		0.000
		Durbin-Watson statistic		1.571

As per table 5, significance level of investors' sensitivity variable (BC) is equal to 0.218 that this value is larger than the considered significance value (5%) in the present study; also the absolute value of t-statistic related to this variable (1.608) is smaller than the obtained t-statistic from the table with the same freedom degree. Therefore, at 95% confidence level, the obtained coefficient for this variable in the above regression model is not significant and hence the 3rd research hypothesis is rejected.

Conclusion

The results of the present study indicate that there is a significant relationship ($p<0.05$) between variables of institutional investors' ratio and stock return of companies and also that no significant relationship ($p<0.05$) has been observed between the variables of managerial investors' ratio and asymmetric sensitivity of investors with stock return of companies. The obtained results from testing research hypotheses for 1st and 2nd hypotheses are consistent with previous studies, while the results obtained for testing the 3rd research hypothesis are found to be inconsistent with previous studies. Considering the findings of the present study some recommendations are presented for making use of the obtained results from this study:

1. Investors and financial analysts are recommended to consider companies' capital structure status as a criterion for companies profitability forecast and measurement in their analyses.

2. Investors and financial analysts are recommended to consider companies' ownership structures in their considerations, because with company's performance improvement its ownership structure also becomes more focused.

3. Considering the different ownership structure and the change of effective parameters on fundamental analysis of companies, such as free floating share and dividend, it is necessary for investors to consider the companies' shareholders composition and ownership type. This variable to a great extent also can solve the restrictions and future financial opportunities in case of occurrence of any financial crisis for companies.

4. Considering the research results those investors who are seeking to obtain higher return from their investments in their investment selection should consider the ownership type of

company's shareholders and also the distribution way or concentration of shareholders and make their investments in the stock of those companies with less layers of governmental ownership and with higher concentration of ownership in them.

References

Abbasian, E., Mahmoudi, V., & Farzanegan, E. (2010). Identification of price bubble of ordinary stock in Tehran Stock Exchange with the use of current value mode, Accounting and Auditing Studies, 17 (60), Tehran University, Iran.

Ang, A., Chen, J, & Yuhang, X .(2002).Downside Risk & the Momentum Effect. Journal of Financial Economics, 35, 160-182.

Brown, J., Fazzari, S., & Petersen, B.(2009). Financing innovation and growth: cash flow, external equity and the 1990s R & D boom. Journal of Finance, 64, 151–185.

Caglayan, M., Maioli, S., & Mateut, S. (2012). Inventories, sales uncertainty, and financial strength. Journal of Banking & Finance, 36, 2512–2521.

Chen, H., & Chen, S.(2012). Investment-cash flow sensitivity cannot be a good measure of financial constraints: evidence from the time series. Journal of Financial Economics 103, 393–410.

Chen, Y., Dai, M.& Zhao, K. (2012). Finite horizon optimal investment and consumption with CARA Utility and proportional transaction costs, Stochastic Analysis and its Applications to Mathematical Finance, Essays in Honour of Jia-an Yan, Eds. T. Zhang and X. Y. Zhou, World Scientific, 39-54.

Guariglia, A., & Mateut, S.(2010). Inventory investment, global engagement, and financial constraints in the UK: evidence from micro data. Journal of Macroeconomics, 32, 239–250.

Imam, S.S. (2010). Identification and analysis of the effective factors on investors' decision-making in Tehran Stock Exchange, Bimonthly Journals of Commercial Studies, 237.

Roodman, D.(2009). How to do xtabond2: an introduction to difference and system GMM in Stata. The Stata Journal 9, 86–136.

Samavati, P. (2009). Relationship between financial reporting ambiguity and stock return distribution, Master's thesis, Tehran: Allameh Tabatabai University.

Sarafidis, V., Yamagata, T., & Robertson, D.(2009). A test of cross section dependence for a linear dynamic panel model with regression. Journal of Econometrics 148, 149–161.

Sheikh, M.J., Safarpour, M. H. (2007). Studying the effect of investment period on the performance of investment companies listed on Tehran Stock Exchange (time span of 2002 – 2006), Accounting and Auditing Studies, 50, 99 – 118.